SEQUENCE LISTING

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<120> BIOMARKERS AND TARGETS FOR DIAGNOSIS, PROGNOSIS AND MANAGEMENT OF PROSTATE, BREAST AND BLADDER CANCER

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<160> 88

<170> PatentIn Ver. 2.1

<210> 1
<211> 391
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 1
gtccagtcgc tcagaaattt cctttgatgc tttgaagtta tctctcttgg atctgcttcc 60

tccttatcgt ctctacatcc caagaacaga gagtgagtct tctttatttt cttatctctg 120

tttttagcac agtatttgat atatagtgta gatactataa atgcttgcta aactttgtca 180

aattccacat ttttaaaata aaaatgagaa tgagcttgta gtcaacatgg cgtttgtaag 240

tttggagtct atatatggta gatatacata tttttaaatc taagtgcaac ttttctcttg 300

attatcttga aatgccttat catctccaca tttgctgtag gcagtagttt agtgggtcca 360

ttatatctgc cacactgatt gtcttaaata a 391

<210> 2
<211> 614
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 2
cagtagtggc cccaaatgcc aggctgcact gatatttatt ggatataaga caaaggggca 60

gggtaaggaa tgtgaaccat ctccaataat aggtaaggtc acatgggtca tgtgtccact 120

ggacaggggg cccttccctg cctggcagca gaggcagaga gagagagaag agagagagac 180

agcttatgcc attatttctg catatcagac atttagtact ttcactaatt tgctcctgct 240

atctaaaagg cagagccagg tatacaggat ggaacatgaa agcggactag gagcgtgacc 300

actgaagcac agcatcacag ggagacaggc ctctggatac tggccggggg gccctgactg 360

atgtcaaggc cctccacaag agtggaggag ttagtcttcc tctaaactcc cccgggggaa 420

agggaggctc cttttcccag tctgctaagt agtgggtgtt tttccttgac actgatgcta 480

ctgctagacc atggtccact ttgcaacagg catcttccca gacactggtg ttactgctag 540

accaagccct ctggtggccc tgtccgggca taagagaagg ctcacactct tgtcttctgg 600

ccacttcgca ctat 614

<210> 3
<211> 757
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 3
acaacgacac attcaggagt taaatattta tcatcaaaca ttggattttt ccttaacgct 60

agagattgct acaaatcttc tgaagggtct catggcttc aggctaagaa gagatttctc 120

cctgttataa gcagcaagac aaattagcca tttcactctc aaacttcact aatgatcaca 180

ttctttccaa aaggaactct agaagaccaa atgccccgag ttaagaacat caaaactaac 240

catctgaaga aacttcccaa gtgtaagact ctgccattaa aacattaccg agaggggact 300

caaacagtct tttcttccct ttgtcgtgtt tctttgctcc cagacccaag gcacttggcg 360

gacagtactt gatacaataa tttaaaaagc accactccct tcccactttg taaataccca 420

gaactctaat tggaccaccc tgaagcttag gacctaccag ccatacaaat agtaaactct 480

gtccacgatt cactcatctg tgtattttct atagatgttt actaggcgtt tgttatataa 540

aaataccccg gccaggcacg gtggctcacg cctgtaatcc cagcactttg ggaggtgggt 600

ggatcacctg aggtcgggag ttcgagacca gcctgaccag catggtggaa cccccatctc 660

tactaaaaac acaaaaaatt agccgggcgt ggtggcacat gcctgtaatc ccagctactc 720

aggaggctga ggcggagaat tgcttgaacc cggaagg 757

<210> 4
<211> 673
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 4
caggacacag agtaagatac ccactgactt cttgtggtct acttcctggg tgttgtttca 60

atgggctttg ttataacagg actagtcttc tgtaaataca acttggtaaa taggatgaaa 120

cataactttg cgacaattca gtagaaatag gcatacaaac ctgggcctga tgacactcac 180

ctccccttgg ctataaacat taccctacct gttaagtcag taatcctttg ggagagcgct 240

tactgagtat ctatgatatg caaagaccaa agaccgaggg ggatccctgg tgtagagcaa 300

gcacacacct ggttattagc tacctgccac cctgctgggc atgcaacata cattgtctca 360

aattctaacc accctgcaag gcaagcttcc ttgttctttt aaagaagaaa agtagaccag 420

caagattgat ttgctcaaga ttacacagcc tggaatcttg tcatgggcat gtctgactct 480

gatagcaata ccctcaaaga aactgtcaga gaagactcaa taagaagaaa gttgagatac 540

agaaaccaac aggagaaggt aattcagaaa ttcaaacaga gtgggtgtga tgggaagaat 600

tcattaataa gaaggtacct ctgtagaaaa atcttaccag acagtctgga agtgaaggaa 660

acagccaata gtc 673

<210> 5
<211> 358
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 5
gtcactgcac attaagatgg agcccgaaga gccacactcc gaggggggcat cgcaggagga 60

tggggctcaa ggtgcctggg gctgggcacc cctaagtcac ggctctaagg agaaagctct 120

cttcctgccc ggcggagccc tcccctcccc ccggatcccc gtgctttccc gagaggggag 180

gaccagagac cggcagatgg ctgcagcgct cctcactgcc tggtcccaga tgccagtgac 240

tttcgaggat gtggccttgt acctctcccg ggaggagtgg ggacggctgg accacacgca 300

gcagaacttc tacagggaat gtcctgcaga agaaaaatgg gctgtcactg ggctttcc 358

<210> 6
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 6
cacagatgta gcttcctcac tgg 23

<210> 7
<211> 610
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 7
ctggagtaca atgtcagtgt ttacactgtc aaggatgaca aggaaagtgt ccctatctct 60

gataccatca tcccagctgt tcctcctccc actgacctgc gattcaccaa cattggtcca 120

gacaccatgc gtgtcacctg ggctccaccc ccatccattg atttaaccaa cttcctggtg 180

cgttactcac ctgtgaaaaa tgaggaagat gttgcagagt tgtcaatttc tccttcagac 240

aatgcagtgg tcttaacaaa tctcctgcct ggtacagaat atgtagtgag tgtctccagt 300

gtctacgaac aacatgagag cacacctctt agaggaagac agaaaacagg tcttgattcc 360

ccaactggca ttgacttttc tgatattact gccaactctt ttactgtgca ctggattgct 420

cctcgagcca ccatcactgg ctacaggatc cgccatcatc ccgagcactt cagtgggaga 480

cctcgagaag atcgggtgcc ccactctcgg aattccatca ccctcaccaa cctcactcca 540

ggcacagagt atgtggtcag catcgttgct cttaatggca gagaggaaag tcccttattg 600

attggccaac 610

<210> 8
<211> 1649
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

Primer

<400> 8
cggcagccag cctattcttt ggccgggtcg gtgcgagtgg tcggctgggc agagtgcacg 60

ctgcttggcg ccgcaggtga tcccgccgtc cactcccggg agcagtgatg ttgggcaact 120

ctgcgccggg gcctgcgacc cgcgaggcgg gctcggcgct gctagcattg cagcagacgg 180

cgctccaaga ggaccaggag aatatcaacc cggaaaaggc agcgcccgtc caacaaccgc 240

ggacccgggc cgcgctggcg gtactgaagt ccgggaaccc gcggggtcta gcgcagcagc 300

agaggccgaa gacgagacgg gttgcacccc ttaaggatct tcctgtaaat gatgagcatg 360

tcaccgttcc tccttggaaa gcaaacagta aacagcctgc gttcaccatt catgtggatg 420

aagcagaaaa agaagctcag aagaagccag ctgaatctca aaaaatagag cgtgaagatg 480

ccctggcttt taattcagcc attagtttac ctggacccag aaaaccattg gtccctcttg 540

attatccaat ggatggtagt tttgagtcac cacatactat ggacatgtca attgtattag 600

aagatgaaaa gccagtgagt gttaatgaag taccagacta ccatgaggat attcacacat 660

accttaggga aatggaggtt aaatgtaaac ctaaagtggg ttacatgaag aaacagccag 720

acatcactaa cagtatgaga gctatcctcg tggactggtt agttgaagta ggagaagaat 780

ataaactaca gaatgagacc ctgcatttgg ctgtgaacta cattgatagg ttcctgtctt 840

ccatgtcagt gctgagagga aaacttcagc ttgtgggcac tgctgctatg ctgttagcct 900

caaagtttga agaaatatac cccccagaag tagcagagtt tgtgtacatt acagatgata 960

cctacaccaa gaaacaagtt ctgagaatgg agcatctagt tttgaaagtc cttacttttg 1020

acttagctgc tccaacagta aatcagtttc ttacccaata ctttctgcat cagcagcctg 1080

caaactgcaa agttgaaagt ttagcaatgt ttttgggaga attaagtttg atagatgctg 1140

acccatacct caagtatttg ccatcagtta ttgctggagc tgcctttcat ttagcactct 1200

acacagtcac gggacaaagc tggcctgaat cattaatacg aaagactgga tataccctgg 1260

aaagtcttaa gccttgtctc atggaccttc accagaccta cctcaaagca ccacagcatg 1320

cacaacagtc aataagagaa aagtacaaaa attcaaagta tcatggtgtt tctctcctca 1380

acccaccaga gacactaaat ctgtaacaat gaaagactgc ctttgttttc taagatgtaa 1440

atcactcaaa gtatatggtg tacagttttt aacttaggtt tttaatttta caatcatttc 1500

tgaatacaga agttgtggcc aagtacaaat tatggtatct attacttttt aaatggtttt 1560

aatttgtata tcttttgtat atgtatctgt cttagatatt tggctaattt taagtggttt 1620

tgttaaagta ttaatgatgc cagctgccg 1649

<210> 9
<211> 175
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 9
acccactcgt gagtccaacg gtcttttctg cagaaaggag gactttcctt tcaggggtct 60

ttctggggct cttactataa aaggggacca actctccctt tgtcatatct tgtttctgat 120

gacaaaaaat aacacattgt taaaattgta aaattaaaac atgaaatata aatta 175

<210> 10
<211> 166
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 10
gtttcgctcc acattcatcc tttcttactg ggcactgatg ttgagagcat caggcagggt 60

ataatgttat gttgcagtaa caaacaccct caatatctca gtggcttaaa atgacaacga 120

tctttttttt gtttgtttgt ttatgctcta tatcacccag ggatca 166

<210> 11
<211> 107
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 11
tgctctgccc cacatctgaa caagctaata agaaagcccg atgttctttc ctttggtgcc 60

attgggaaat tcaaaccatg cacaactctg cctgtatgaa gggcgca 107

<210> 12
<211> 183
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 12
caaccttagc ccctctcctc ttcttcacga tgccattctg ccatttctgt tttgtggtag 60

acaggttggc ccaggcactc taaggcccag gctggcacag gttggcccag gcacttcaag 120

cctaagtcca tttacagttt ctattccatc tcttcctaaa gaagaggaga ggggctaagg 180

ttg 183

<210> 13
<211> 92
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 13
aaacaaacgt ctttgggtaa aattctattt cttttaatgt tttaaaatat ttgtagtcac 60

taattgtaag tcatattcct ctttgtccag ct 92

<210> 14
<211> 182
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 14
gatgtaatta aagctgtaga tgagggctat cgactgccac cccccatgga ctgcccagct 60

gccttgtatc agctgatgct ggactgctgg cagaaagaca ggaacaacag acccaagttt 120

gagcagattg ttagtattct ggacaagctt atccggaatc ccggcagcct gaaggatcat 180

ca 182

<210> 15
<211> 174
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 15
gccaaatggg tagcattgtt gctcggcctt ctagtctgcc agtaggaaag tccaaccatt 60

aggtcgggga agaagggtct ggatttggtt gacaatggtt ggatggggga tagaagcaga 120

gagagagagg gagggcagct caagggtatc ttgccccact ctgtttatgc tgat 174

<210> 16
<211> 132
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 16
cacctaacaa tatatcaatt ttttaaaaat ggaatttctt atgccctctt tatttatgga 60

catgtatgtc cataatggga gacgttttct ttggactgat gcttgaatca gtgggtgctt 120

ggcattgctg at 132

<210> 17
<211> 135
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 17
cagacacaca catgcacacc attctagaat gcttccttaa aagaaggagg gttgccctag 60

tctcaaaatc ttaaaagcca tatgtgcatt gatttctgca caggtaggca atttgtgatt 120

ttatttttcc ttatg 135

<210> 18
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 18
cttcatggca ggactcggtt tggg 24

<210> 19
<211> 471

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 19
gccccaaatg ccaggctgca ctgatctcat gtctgtgtca ctggaaccaa caggcctgcc 60

tcaaccactg tccacctgca catctgagag gctggcaggt caccagggct agccgtgcac 120

gtcagttcct gggaagaaag tagaatgtga atcatcttct ctcaaacgcc tatcaaaagc 180

ccagctgaga tcaataattt ggtgggagaa cagacctgta ccaattggct cggtgtttgg 240

tggggtattg taaatttgga tcctaaatca aagggtatcc ctagaaggac ccacatggaa 300

tggcctcctc ctaaacatcc ctccatgttg gtacttcctg actcttttcc agcaatctca 360

aagcacaaga agcagtggtg ggaacccagg cctggcatct tgttggagcc catggttggg 420

gggtaggagc aactttacag gccatcaatt atgcccctat acgcacctcc c 471

<210> 20
<211> 209
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 20
gcccttttata aatacgatta gtatggagaa ttgatacatt aacagttagc tttataaatt 60

gacagatttc taaattaacc tatggtccac aaatcaagtt ctatcactat ttcctgccac 120

caaaatcagt gatgaagcct ctcccacact aaatgaagag tggcgaggga cagaattcca 180

cttgtcttcc ttttgctgca ctaactaca 209

<210> 21
<211> 407
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 21
caagcagcat agcctctctg aaactcaatt tcctcacatt tataaatgag cttttatatt 60

atttacaaac ctacctcata gagcaggttg caggctacat gagaaggtgc aagttcaatg 120

ccaagcaggg tcctagtatt taataaaagc tcaataaata ttcattttct tctttccttc 180

tcttacttga agtataacat ttgataatga attttctcat tgcaacaata acacccttc 240

cactgaggga tttgtatccc tgcttaagaa gctattagta ttctacagca ggactcaccc 300

cacacaatct tggcaggaat acatccctct acctctctgg tcaataacct gcctggcctg 360

tgaccccagg cttcctggag aagcaccaag tcctcccagt ttccccc 407

<210> 22
<211> 267
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 22
cattggtgca gcaggtttag atggctatgt gctagagtat tgctttgaag gaagtaagta 60

caaccagtag ataaaatgaa tactgtcatc aataggtgag atatgtccct ccccttttctg 120

ttgtctctct ttcttgagaa cgcatcacct tcctacgaaa ataagatcaa gccaaacgtc 180

atccttctga gatgtatata aactaagccc ttttttagta cttggtgctt ataaattgat 240

atctcaaaag tatcttggct aggctgc 267

<210> 23
<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 23
catagtccag gagcagagtt agccagaatt gcctcctgct gccccagctt agagagctcc 60

catctcaatc attgagcctg aaggcttcaa gcccaaaatg caacaagacc cccagcctac 120

atttctcagc tcccctggag ccagtgatcc tgtaacgctg ctggaggtca gtctgagcta 180

ccaagactgt ccctagacaa aggtgggagt cccccacact gccaagacca aatccctcac 240

tcaacctgct gaggtgttgg atggggaaac aagaggcaaa actgaggcac ctgatgcatt 300

cagccctgct tgtgcagaag tgcattgact gcc 333

<210> 24

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 24
cctgtggcgt aaggcatccc a 21

<210> 25
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 25
gcaagcactc ctttgtaaaa tgtcc 25

<210> 26
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 26
tgcgttcacc attcatgtgg atgaagcag 29

<210> 27
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 27
ctcctacttc aactaaccag tccacgag 28

<210> 28
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Primer

<400> 28
gatgctttga agttatctct cttgg 25

<210> 29
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 29
atcagtgtgg cagatataat ggacc 25

<210> 30
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 30
gccccaaatg ccaggctgca ctgat 25

<210> 31
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 31
gccagaagac aagagtgtga gcctt 25

<210> 32
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 32
gcttcagggt ggtccaatta gagtt 25

<210> 33
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 33
tccaacaacg acacattcag gagtt 25

<210> 34
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 34
ggacacagag taagataccc actga 25

<210> 35
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 35
cctcggtctt tggtctttgc atatc 25

<210> 36
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 36
acaaggaaag tgtccctatc tctga 25

<210> 37
<211> 25
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 37
ctcgaggtct cccactgaag tgctc 25

<210> 38
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 38
cactgcacat taagatggag cccga 25

<210> 39
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 39
cctgtagaag ttctgctgcg tgtgg 25

<210> 40
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 40
cgagctgcct gacggccagg tcatc 25

<210> 41
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 41
gaagcatttg cggtggacga tggag 25

<210> 42
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 42
tagaagacca aatgccccga gt 22

<210> 43
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 43
tgtatttctg tgggatcggt gg 22

<210> 44
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 44
ccccttttat agtaagagcc ccaga 25

<210> 45
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 45
ccataagaga aatgattggt aggtttgcat gaaattttaa aatttcctgt ggcgtaaggc 60

atcccataac gaagccaaaa ggtgagtgat agactgggag aaataactgc cagacgttgc 120

cagacaaaga tttcatattt ctaatatgct agagtacctt taatttgata agaaaaagat 180

aagcaatcct gtaataaaat ggacatttta caaaggagtg cttgcaaatg gccagtgaat 240

ttatgcaaat atgttcaggg aaataggaat gaaaacgaga ttccactttt tcatcatcca 300

tttgattggc aagaaatttt taaaagagta atacctagtg aatcactcat gtaggaaaat 360

gggttggtg 369

<210> 46
<211> 301
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (212)
<223> n = A, C, G or T

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 46
gcccttgaag agtgtaacca agaagcatct ctcaatcaat gaacctgaga cagcctgttc 60

acttctgacc atcattcttg tcctttagat ctcagtttca aattcatttc ttctagacat 120

tcatctcttc ccatgtttaa tctggaacca tctacccttc caccagacca attatcctgg 180

caaattaatg taatagacca gtattaatta tntggttgta tgtcttaaca acattctagg 240

tgctgtgcca aaaacaaatg aatagcaaca caaggtcttc ttggttacac tcttcaaggg 300

c 301

<210> 47
<211> 3061
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (15)..(1172)

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 47
cggctctcct caac atg aga gct gca ccc ctc ctc ctg gcc agg gca gca 50
Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala
1 5 10

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agc ctt agc ctt ggc ttc ttg ttt ctg ctt ttt ttc tgg cta gac cga   98
Ser Leu Ser Leu Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg
          15                  20                  25

agt gta cta gcc aag gag ttg aag ttt gtg act ttg gtg ttt cgg cat   146
Ser Val Leu Ala Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His
      30                  35                  40

gga gac cga agt ccc att gac acc ttt ccc act gac ccc ata aag gaa   194
Gly Asp Arg Ser Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu
  45                  50                  55                  60

tcc tca tgg cca caa gga ttt ggc caa ctc acc cag ctg ggc atg gag   242
Ser Ser Trp Pro Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu
                  65                  70                  75

cag cat tat gaa ctt gga gag tat ata aga aag aga tat aga aaa ttc   290
Gln His Tyr Glu Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe
              80                  85                  90

ttg aat gag tcc tat aaa cat gaa cag gtt tat att cga agc aca gac   338
Leu Asn Glu Ser Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp
          95                  100                 105

gtt gac cgg act ttg atg agt gct atg aca aac ctg gca gcc ctg ttt   386
Val Asp Arg Thr Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe
     110                 115                 120

ccc cca gaa ggt gtc agc atc tgg aat cct atc cta ctc tgg cag ccc   434
Pro Pro Glu Gly Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro
125                 130                 135                 140

atc ccg gtg cac aca gtt cct ctt tct gaa gat cag ttg cta tac ctg   482
Ile Pro Val His Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu
                145                 150                 155

cct ttc agg aac tgc cct cgt ttt caa gaa ctt gag agt gag act ttg   530
Pro Phe Arg Asn Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu
            160                 165                 170

aaa tca gag gaa ttc cag aag agg ctg cac cct tat aag gat ttt ata   578
Lys Ser Glu Glu Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile
        175                 180                 185

gct acc ttg gga aaa ctt tca gga tta cat ggc cag gac ctt ttt gga   626
Ala Thr Leu Gly Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly
    190                 195                 200

att tgg agt aaa gtc tac gac cct tta tat tgt gag agt gtt cac aat   674
Ile Trp Ser Lys Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn
205                 210                 215                 220

ttc act tta ccc tcc tgg gcc act gag gac acc atg act aag ttg aga   722
Phe Thr Leu Pro Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg
                225                 230                 235
```

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gaa ttg tca gaa ttg tcc ctc ctg tcc ctc tat gga att cac aag cag   770
Glu Leu Ser Glu Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln
            240                 245                 250

aaa gag aaa tct agg ctc caa ggg ggt gtc ctg gtc aat gaa atc ctc   818
Lys Glu Lys Ser Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu
        255                 260                 265

aat cac atg aag aga gca act cag ata cca agc tac aaa aaa ctt atc   866
Asn His Met Lys Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile
    270                 275                 280

atg tat tct gcg cat gac act act gtg agt ggc cta cag atg gcg cta   914
Met Tyr Ser Ala His Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu
285                 290                 295                 300

gat gtt tac aac gga ctc ctt cct ccc tat gct tct tgc cac ttg acg   962
Asp Val Tyr Asn Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr
                305                 310                 315

gaa ttg tac ttt gag aag ggg gag tac ttt gtg gag atg tac tat cgg   1010
Glu Leu Tyr Phe Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg
            320                 325                 330

aat gag acg cag cac gag ccg tat ccc ctc atg cta cct ggc tgc agc   1058
Asn Glu Thr Gln His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser
        335                 340                 345

cct agc tgt cct ctg gag agg ttt gct gag ctg gtt ggc cct gtg atc   1106
Pro Ser Cys Pro Leu Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile
    350                 355                 360

cct caa gac tgg tcc acg gag tgt atg acc aca aac agc cat caa ggt   1154
Pro Gln Asp Trp Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly
365                 370                 375                 380

act gag gac agt aca gat tagtgtgrac agagatctct gtagaaagag          1202
Thr Glu Asp Ser Thr Asp
                385

tagctgccct ttctcagggc agatgatgct ttgagaacat actttggcca ttacccccca 1262

gctttgagga aaatgggctt tggatgatta ttttatgttt tagggacccc caacctcagg 1322

caattcctac ctcttcacct gaccctgccc ccacttgcca taaaacttag ctaagttttg 1382

ttttgttttt cagcgttaat gtaaaggggc agcagtgcca aaatataatc agagataaag 1442

cttaggtcaa agttcataga gttcccatga actatatgac tggccacaca ggatcttttg 1502

tatttaagga ttctgagatt ttgcttgagc aggattagat aagtctgttc tttaaatttc 1562

tgaaatggaa cagatttcaa aaaaaattcc cacaatctag ggtgggaaca aggaaggaaa 1622

gatgtgaata ggctgatggg gaaaaaacca atttacccat cagttccagc cttctctcaa 1682

ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc actggaaaac 1742
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tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac taaaaattaa 1802

aacctctttg tgtcccttgg tcctggaaca tttatgttcc ttttaaagaa acaaaaatca 1862

aactttacag aaagatttga tgtatgtaat acatatagca gctcttgaag tatatatatc 1922

atagcaaata agtcatctga tgagaacaag ctatttgggc acaacacatc aggaaagaga 1982

gcaccacgtg atggagtttc tccagaagct ccagtgataa gagatgttga ctctaaagtt 2042

gatttaaggc caggcatggt ggtttacgcc tataatccca gcattttggg actccgaggt 2102

gggcagatca cttgagctca ggagctcaag atcagcctgg gcaacatggt gaaaccttgt 2162

ctctacataa aatacaaaaa cttagatggg catggtgctg tgtgcctata gtccactact 2222

tgtggggcta aggcaggagg atcacttgag ccccggaggt cgaggctaca gtgacccaag 2282

agtgcactac tgtactccag ccagggcaag agagcgagac cctgtctcaa taaataaata 2342

aataaataaa taaataaata aataaaaaca aagttgatta agaaaggaag tataggccag 2402

gcacagtggc tcacacctgt aatccttgca ttttggaagg ctgaggcagg aggatcactt 2462

taggcctggt gtgttcaaga ccagcctggt caacatagtg agacactgtc tctaccaaaa 2522

aaaggaagga agggacacat atcaaactga aacaaaatta gaaatgtaat tatgttatgt 2582

tctaagtgcc tccaagttca aaacttattg gaatgttgag agtgtggtta cgaaatacgt 2642

taggaggaca aaaggaatgt gtaagtcttt aatgccgata tcttcagaaa acctaagcaa 2702

acttacaggt cctgctgaaa ctgcccactc tgcaagaaga aatcatgata tagctttcca 2762

tgtggcagat ctacatgtct agagaacact gtgctctatt accattatgg ataaagatga 2822

gatggtttct agagatggtt tctactggct gccagaatct agagcaaagc catcccccct 2882

cctggttggt cacagaatga ctgacaaaga catcgattga tatgcttctt tgtgttattt 2942

ccctcccaag taaatgtttg tccttgggtc cattttctat gcttgtaact gtcttctagc 3002

agtgagccaa atgtaaaata gtgaataaag tcattattag gaagttcaaa aaaaaaaaa 3061

<210> 48
<211> 386
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 48
Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala Ser Leu Ser Leu

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  1               5                  10                  15

Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala
            20                  25                  30

Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser
        35                  40                  45

Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro
    50                  55                  60

Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu
65                  70                  75                  80

Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser
                85                  90                  95

Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr
            100                 105                 110

Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe Pro Pro Glu Gly
        115                 120                 125

Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His
    130                 135                 140

Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu Pro Phe Arg Asn
145                 150                 155                 160

Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu Lys Ser Glu Glu
                165                 170                 175

Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile Ala Thr Leu Gly
            180                 185                 190

Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly Ile Trp Ser Lys
        195                 200                 205

Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn Phe Thr Leu Pro
    210                 215                 220

Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg Glu Leu Ser Glu
225                 230                 235                 240

Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln Lys Glu Lys Ser
                245                 250                 255

Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu Asn His Met Lys
            260                 265                 270

Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile Met Tyr Ser Ala
        275                 280                 285

His Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu Asp Val Tyr Asn
    290                 295                 300

Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr Glu Leu Tyr Phe
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305 310 315 320

Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg Asn Glu Thr Gln
325 330 335

His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser Pro Ser Cys Pro
340 345 350

Leu Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile Pro Gln Asp Trp
355 360 365

Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly Thr Glu Asp Ser
370 375 380

Thr Asp
385

<210> 49
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 49
tcgctccaca ttcatccttt ct 22

<210> 50
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 50
tgatccctgg gtgatataga gcata 25

<210> 51
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 51
gccccacatc tgaacaagct aataa 25

<210> 52
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 52
tgcgcccttc atacaggcag agttg 25

<210> 53
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 53
cacgatgcca ttctgccatt tctgt 25

<210> 54
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 54
ggaagagatg gaatagaaac tgtaa 25

<210> 55
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 55
cttaactcgg gcatttggtc ttc 23

<210> 56
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 56
Arg Lys Lys Glu Lys Val Lys Arg Ser Gln Lys Ala Thr Glu Phe Ile
1 5 10 15

Asp Tyr Ser Ile Glu
20

<210> 57
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 57
cactggaacc aacaggcctg cctcaac 27

<210> 58
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 58
ccgagccaat tggtacaggt ctgttctccc 30

<210> 59
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 59
cctcaagact ggtccacgga gtgtatga 28

<210> 60
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

<400> 60
gggtaatggc caaagtatgt tctcaaagca 30

<210> 61
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 61
aaacaaacgt ctttgggtaa a 21

<210> 62
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 62
ctggacaaag aggaatatga 20

<210> 63
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 63
gcccttata aatacgatta gtatggag 28

<210> 64
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 64
tgtagttagt gcagcaaaag gaaga 25

<210> 65
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 65
gatgtaatta aagctgtaga tgaggg 26

<210> 66
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 66
gaatactaac aatctgctca aacttggg 28

<210> 67
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 67
gccaaatggg tagcattgtt gctcgg 26

<210> 68
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 68
cagagtgggg caagataccc ttgag 25

<210> 69
<211> 21
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 69
aatggaattt cttatgccct c 21

<210> 70
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 70
caatgccaag cacccactga ttc 23

<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 71
acacagacac acacatgcac acca 24

<210> 72
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 72
cctacctgtg cagaaatcaa 20

<210> 73
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 73
agcagcatag cctctctgaa actc 24

<210> 74
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 74
ccttctcatg tagcctgcaa cctgctc 27

<210> 75
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 75
cattggtgca gcaggtttag atgg 24

<210> 76
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 76
gagatatcaa tttataagca ccaag 25

<210> 77
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 77
atctcaatca ttgagcctga agg 23

<210> 78
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 78
cagcaggttg agtgagggat ttgg 24

<210> 79
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 79
cgcctcaggc tggggcagca tt 22

<210> 80
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 80
acagtggaag agtctcattc gagat 25

<210> 81
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 81
cgagctgcct gacggccagg tcatc 25

<210> 82
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 82
gaagcatttg cggtggacga tggag 25

<210> 83
<211> 2088
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (99)..(503)

<220>
<223> Description of Artificial Sequence: Synthetic
Primer

<400> 83
gaccttaaat atatcgaggt ggctaattga tgtataataa tttacaaaat tattcttcta 60

ttgctacaga gctacaattc aatttacagt aggccacc atg agg gcc ttc tta agg 116
Met Arg Ala Phe Leu Arg
1 5

aac cag aaa tat gag gat atg cac aat att att cac att tta cag atc 164
Asn Gln Lys Tyr Glu Asp Met His Asn Ile Ile His Ile Leu Gln Ile
10 15 20

aga aaa ttg agg cac aga tta agt aac ttc cca agg cta cca ggc att 212
Arg Lys Leu Arg His Arg Leu Ser Asn Phe Pro Arg Leu Pro Gly Ile
25 30 35

cta gct cca gaa act gtg ctc tta cca ttc tgc tac aag gta ttt cga 260
Leu Ala Pro Glu Thr Val Leu Leu Pro Phe Cys Tyr Lys Val Phe Arg
40 45 50

aaa aaa gaa aaa gta aaa aga agt caa aag gca aca gag ttc att gat 308
Lys Lys Glu Lys Val Lys Arg Ser Gln Lys Ala Thr Glu Phe Ile Asp
55 60 65 70

tat tcc ata gaa cag tca cac cat gca att ctc aca ccc ttg cag aca 356
Tyr Ser Ile Glu Gln Ser His His Ala Ile Leu Thr Pro Leu Gln Thr
75 80 85

cac ttg acc atg aaa ggt tcc tca atg aaa tgt tcc tca tta tct tca 404
His Leu Thr Met Lys Gly Ser Ser Met Lys Cys Ser Ser Leu Ser Ser
90 95 100

gaa gcc ata tta ttc aca ttg act ttg cag tta act cag acc cta ggt 452
Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln Leu Thr Gln Thr Leu Gly
105 110 115

ctg gaa tgc tgt ctt ctc tac tta tcc aaa act ata cat cca cag atc 500

Leu Glu Cys Cys Leu Leu Tyr Leu Ser Lys Thr Ile His Pro Gln Ile
120 125 130

ata taaactctca gccctgctgc aaagcctttc cagaaaaata aaaatggttg 553
Ile
135

aaaaggcaat tctgctacca atgactgttt aagcccagcc aagtaactga accattccaa 613

cttcaattta cttatgaaaa gaatttgatg atgtaggagg ttatttcaat tctaaaatac 673

aaacccatgt tgatctttct caatcttgaa ctcatagatt attatctatt atctcaattt 733

agtttgttat ttatcctagt gggccattaa aaactaccac atgtgtttct gtctctccat 793

tagtcaataa ctaaactaac gagcaattag taagccatgt gccagatgct ccgctaggca 853

ccagagggat aaaaacaata cttatagtat accactaatt ttcgcttagt aactagtgaa 913

atgttcaagt catgcctgag tcaagagttg aggagacatt acaatgtgta atggaaacca 973

aggaaagtga aactttggat aagtggggac tagtgtattt atatatttaa ttgatttctg 1033

actctatcat tggcctccaa acacagattg tgtttttctt tggttttgtt ttcttcacta 1093

tgggatcttc tgtgcccagc acagtgcctg acacatagaa aacaatcaat atttgctgaa 1153

taaatgatta aaaaatcaga gaactttccc attctgtttg gatctataga acatccagag 1213

taagtgatga gggcctctgc atttatatgc gcttaaatta agattatgtg agaaaagttt 1273

aaagacactt agtagagtga ttttgaaata tagtaaacac ttggaaatgg tggtgcttta 1333

aaaagatatt aatagataat atgaaaatct ccatctcaaa aataatgcat aaactattta 1393

aaggaaaatc acatctccag gctttcaatg tttgttcatt acttttttcat atatttttac 1453

catctgctga aggcagtcat atcaaagggt aaagaaagat gggaggaaaa ctcagtaaga 1513

attatattag tctgtttgca aagtagaaaa agattctcat cactcaacct tatgagcagg 1573

aagagggaag gctgtttgag aaccatttac ttagcagaac cacatatttt agacacttcc 1633

ctgcattaac tgcacaaaca atatgtttgc aaacttgttr gatcaacctc caacaacgac 1693

acattcagga gttaaatatt tttcatcaaa cattggattt ttccttaacg ctagagattg 1753

ctacaaatct tctgaagggt ctcaatggct tcaggctaag aagagatttc tccctgttat 1813

aagcagcaag acaaattagc catttcactc tcaaacttca ctaatgatca cattctttcc 1873

aaaaggaact ctagaagacc aaatgccccg agttaagaac atcaaaacta accatctgaa 1933

gaaacttccc aagtgtaaga ctctgcctgc acgacaacac ataaaaaaag agagaagaat 1993

caaatagaca caataaaaaa tgataaaggg gatatcacca ccgatcccac agaaatacaa 2053

actaccatca gagaatacta caaacacctc tacgc 2088

<210> 84
<211> 135
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 84
Met Arg Ala Phe Leu Arg Asn Gln Lys Tyr Glu Asp Met His Asn Ile
1 5 10 15

Ile His Ile Leu Gln Ile Arg Lys Leu Arg His Arg Leu Ser Asn Phe
20 25 30

Pro Arg Leu Pro Gly Ile Leu Ala Pro Glu Thr Val Leu Leu Pro Phe
35 40 45

Cys Tyr Lys Val Phe Arg Lys Lys Glu Lys Val Lys Arg Ser Gln Lys
50 55 60

Ala Thr Glu Phe Ile Asp Tyr Ser Ile Glu Gln Ser His His Ala Ile
65 70 75 80

Leu Thr Pro Leu Gln Thr His Leu Thr Met Lys Gly Ser Ser Met Lys
85 90 95

Cys Ser Ser Leu Ser Ser Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln
100 105 110

Leu Thr Gln Thr Leu Gly Leu Glu Cys Cys Leu Leu Tyr Leu Ser Lys
115 120 125

Thr Ile His Pro Gln Ile Ile
130 135

<210> 85
<211> 2506
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (99)..(503)

<220>
<223> Description of Artificial Sequence: Synthetic Primer

<400> 85
gaccttaaat atatcgaggt ggctaattga tgtataataa tttacaaaat tattcttcta 60

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ttgctacaga gctacaattc aatttacagt aggccacc atg agg gcc ttc tta agg 116
                                          Met Arg Ala Phe Leu Arg
                                            1               5

aac cag aaa tat gag gat atg cac aat att att cac att tta cag atc   164
Asn Gln Lys Tyr Glu Asp Met His Asn Ile Ile His Ile Leu Gln Ile
            10                  15                  20

aga aaa ttg agg cac aga tta agt aac ttc cca agg cta cca ggc att   212
Arg Lys Leu Arg His Arg Leu Ser Asn Phe Pro Arg Leu Pro Gly Ile
        25                  30                  35

cta gct cca gaa act gtg ctc tta cca ttc tgc tac aag gta ttt cga   260
Leu Ala Pro Glu Thr Val Leu Leu Pro Phe Cys Tyr Lys Val Phe Arg
    40                  45                  50

aaa aaa gaa aaa gta aaa aga agt caa aag gca aca gag ttc att gat   308
Lys Lys Glu Lys Val Lys Arg Ser Gln Lys Ala Thr Glu Phe Ile Asp
55                  60                  65                  70

tat tcc ata gaa cag tca cac cat gca att ctc aca ccc ttg cag aca   356
Tyr Ser Ile Glu Gln Ser His His Ala Ile Leu Thr Pro Leu Gln Thr
                75                  80                  85

cac ttg acc atg aaa ggt tcc tca atg aaa tgt tcc tca tta tct tca   404
His Leu Thr Met Lys Gly Ser Ser Met Lys Cys Ser Ser Leu Ser Ser
            90                  95                  100

gaa gcc ata tta ttc aca ttg act ttg cag tta act cag acc cta ggt   452
Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln Leu Thr Gln Thr Leu Gly
        105                 110                 115

ctg gaa tgc tgt ctt ctc tac tta tcc aaa act ata cat cca cag atc   500
Leu Glu Cys Cys Leu Leu Tyr Leu Ser Lys Thr Ile His Pro Gln Ile
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Ile
135

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Pro Arg Leu Pro Gly Ile Leu Ala Pro Glu Thr Val Leu Leu Pro Phe
35 40 45

Cys Tyr Lys Val Phe Arg Lys Lys Glu Lys Val Lys Arg Ser Gln Lys
50 55 60

Ala Thr Glu Phe Ile Asp Tyr Ser Ile Glu Gln Ser His His Ala Ile
65 70 75 80

Leu Thr Pro Leu Gln Thr His Leu Thr Met Lys Gly Ser Ser Met Lys
85 90 95

Cys Ser Ser Leu Ser Ser Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln
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Thr Ile His Pro Gln Ile Ile
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Primer

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